

CSA now certifies to United States standards

by Ray Cardinal
Approval Engineer
Bently Nevada Corporation

Bently Nevada submits products to Approval Agencies, or testing laboratories, to be tested and certified as safe for use in "Hazardous" locations. However, because these standards differ from country to country, it isn't possible for one approval agency to certify products for sale worldwide. A testing laboratory that certifies products for sale in the United States of America must be designated by the U.S. Occupational Safety and Health Administration (OSHA) as a Nationally Recognized Testing Laboratory (NRTL).

The Canadian Standards Association (CSA), a testing laboratory headquartered in Ontario, Canada has been testing and certifying products to Canadian standards since 1940. However, until recently, CSA was unable to certify products for sale in the USA. Now, OSHA has officially recognized CSA as an NRTL for over 360 USA standards. Products certified by CSA to USA standards will be identified with the "CSA-NRTL" designation, and those also intended for the Canadian market will be identified with the "CSA-NRTL/C" mark. The City of Los Angeles has also recognized CSA as an approved testing laboratory.

Bently Nevada Corporation and our customers benefit from CSA's new status in several ways. Because Underwriter's Laboratories (UL) and Factory Mutual (FM) are also OSHA certified, the CSA-NRTL certification is now equivalent to certification by those agencies. A single CSA-NRTL/C certification qualifies products for sale throughout North America.

We will pursue CSA-NRTL/C certification for our products. ■



Technical Training

Seven graduate from Certification Training

by Les Wright
Field Training Manager
for the Americas
Bently Nevada Corporation

In the June 1993 *Orbit*, I discussed Bently Nevada's Certification Training Program. Increasingly, for business and legal reasons, it has become important to document employee job performance standards and certify that employees meet those standards.

Technical Training offers two types of certification. The first type is given upon completion of our standard course after we have tested the student's knowledge of the subject. The second type of certification is to your company's specifications. We can travel to your job site and tailor performance standards to match your employee's job responsibilities. Then we evaluate employee performance against those standards. We will either certify that your employees meet the standards or recommend the training they require to meet them.

This February, we performed the first type of certification for the first time. At the conclusion of our Machinery Diagnostics Course held in San Antonio, Texas, we gave certification exams to seven students. The 82-question, closed-book exam reviewed topics covered in the course. Students were asked to:

- Identify the information contained in steady state and transient plots generated from actual machine data.
- Describe the factors that influence the dynamic stiffness terms in the Fundamental Synchronous Rotor Response Equation at speeds below, at,

and above resonance for a single mode of operation.

- Describe the relationship between quadrature dynamic stiffness and dynamic stiffness.
- Express the relationship between vibration response, input force and dynamic stiffness.
- Describe the factors affecting changes in mode shapes.
- Describe single and multi-plane balance response.
- Explain the vibration response characteristic of malfunctions, such as misalignment, rotating-to-stationary part rubbing, loose foot, the fluid-induced instabilities of oil whirl and whip, and shaft cracks.

All seven students who took the test passed it by answering at least 90% of the questions correctly. Each received a document acknowledging that he "has successfully completed and is certified to have met the course objectives of Bently Nevada's Machinery Diagnostics Course."

This type of test verifies that the student has acquired the knowledge and skills that Bently Nevada feels are appropriate to the subjects taught in our standard course. This same certification is available for all our courses. Of equal or greater importance is how the student applies his knowledge and skill to the tasks required on the job. Bently Nevada's second form of certification addresses this. At your job site, we can verify that your employees have demonstrated the ability to perform the tasks that management requires.

Congratulations to the seven students certified at our Machinery Diagnostics Course. ■